

Ultramid® A3EG5

Polyamide 66

BASF Corporation

Message:

Glass fibre reinforced injection moulding grade for machinery components and housings of high stiffness and dimensional stability such as coil formers and bearing cages. Also used for electrically insulating parts.

General Information				
UL YellowCard		E36632-531619	E41871-233729	
Filler / Reinforcement		Glass fiber reinforced material, 25% filler by weight		
Features		Good dimensional stability		
		Rigidity, high		
		Oil resistance		
Uses		Electronic insulation		
		Machine/mechanical parts		
		Shell		
Agency Ratings		EC 1907/2006 (REACH)		
RoHS Compliance		RoHS compliance		
Forms		Particle		
Processing Method		Injection molding		
Multi-Point Data		Creep Modulus vs. Time (ISO 11403-1)		
		Isochronous Stress vs. Strain (ISO 11403-1)		
		Isothermal Stress vs. Strain (ISO 11403-1)		
		Secant Modulus vs. Strain (ISO 11403-1)		
		Shear Modulus vs. Temperature (ISO 11403-1)		
		Viscosity vs. Shear Rate (ISO 11403-2)		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.32	--	g/cm ³	ISO 1183
Apparent Density	0.70	--	g/cm ³	
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	50.0	--	cm ³ /10min	ISO 1133
Molding Shrinkage				ISO 294-4
Vertical flow direction	1.1	--	%	ISO 294-4
Flow direction	0.48	--	%	ISO 294-4
Water Absorption				ISO 62
Saturated, 23°C	5.7 - 6.3	--	%	ISO 62
Equilibrium, 23°C, 50% RH	1.7 - 2.1	--	%	ISO 62

Viscosity Number (96% H2SO4)	145	--	cm ³ /g	ISO 307
Mold Shrinkage - constrained ¹	0.55	--	%	
Temperature index-at 50% loss of tensile strength				IEC 60216
-- ²	135	--	°C	IEC 60216
-- ³	165	--	°C	IEC 60216
Maximum operating temperature-short cycle operation	240	--	°C	
Automotive Materials (> 1.00 mm)	Passed	--		FMVSS 302
Polymer Abbreviation	PA66-GF25	--		
Screw Speed			mm/sec	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	8600	6500	MPa	ISO 527-2
Tensile Stress (Break)	175	120	MPa	ISO 527-2
Tensile Strain (Break)	3.0	6.0	%	ISO 527-2
Tensile Creep Modulus ⁴ (1000 hr)	--	4300	MPa	ISO 899-1
Flexural Modulus	7600	6000	MPa	ISO 178
Flexural Stress	260	200	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	9.0	--	kJ/m ²	ISO 179/1eA
23°C	12	18	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	55	--	kJ/m ²	ISO 179/1eU
23°C	65	90	kJ/m ²	ISO 179/1eU
Notched Izod Impact (23°C)	9.5	15	kJ/m ²	ISO 180/A
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, not annealed	250	--	°C	ISO 75-2/B
1.8 MPa, not annealed	245	--	°C	ISO 75-2/A
Melting Temperature	260	--	°C	ISO 11357-3
Linear thermal expansion coefficient				ISO 11359-2
Flow: 23 to 80°C	2.5E-5 - 3.5E-5	--	cm/cm/°C	ISO 11359-2
Lateral: 23 to 80°C	6.0E-5 - 7.0E-5	--	cm/cm/°C	ISO 11359-2
Specific Heat	1600	--	J/kg/°C	
Thermal Conductivity	0.34	--	W/m/K	DIN 52612

Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	--	1.0E+10	ohms	IEC 60093
Volume Resistivity	1.0E+15	1.0E+12	ohms·cm	IEC 60093
Relative Permittivity (1 MHz)	3.50	5.50		IEC 60250
Dissipation Factor (1 MHz)	0.014	0.16		IEC 60250
Comparative Tracking Index (Solution A)	550	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating (1.60 mm)	HB	--		UL 94
Injection	Dry	Unit		
Drying Temperature	80.0		°C	
Drying Time	4.0		hr	
Suggested Max Moisture	0.15		%	
Hopper Temperature	80.0		°C	
Rear Temperature	290		°C	
Middle Temperature	290		°C	
Front Temperature	290		°C	
Nozzle Temperature	290		°C	
Processing (Melt) Temp	280 - 300		°C	
Mold Temperature	80.0 - 90.0		°C	
Injection instructions				
Residence Time : <10 min				
NOTE				

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|----|--|
| 1. | Test box with central gating, dimensions of base (107*47*1,5) mm, processing conditions: TM = 290°C, TW = 80°C |
| 2. | 20000 h |
| 3. | 5000 h |
| 4. | strain <= 0.5%, 23°C |

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China



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